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AUTHOR Gaston, Debra Wickstrom; And Others
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ABSTRACT

Through an intensive 19 day outdoor experience of backpacking, hiking, rock climbing, and white water canoeing, the Connecticut Wilderness School has provided a novel therapeutic approach for problem youth referred by a wide variety of state agencies. To determine if participants in this program become more internally oriented, develop a higher level of self confidence, utilize more effective interpersonal coping strategies, and have fewer legal and social difficulties, this empirical investigation studied 135 teenagers (95 males, 40 females), aged 13 to 20, enrolled in the wilderness program and a similar comparison group of teenagers. Referring agencies rated the teenagers on dimensions of problem seriousness, self-awareness, emotional problems, and legal involvement. Demographic and personality pretest measures were collected. A random sub-sample of 72 students was also given a structured interview, assessing coping strategies in problematic interpersonal situations. A multi source follow-up of these students is currently underway. With approximately one half of the follow-up data collected, the following preliminary results have been obtained. Program participants remained more internally oriented 6 months after the course and reported a significantly lower overall frequency of deviant behavior than the comparison group. The teenagers reported positive changes in meeting challenges, self confidence, getting along with parents, grades in school, and controlling temper.
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AN EMPIRICAL INVESTIGATION OF A
WILDERNESS ADVENTURE PROGRAM FOR TEENAGERS:
The Connecticut Wilderness School

DEBRA WICKSTROM GASTON

MARY MAHONEY PLOUFFE

JACK M. CHINSKY¹

University of Connecticut

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49th Annual Meeting, March 31, 1978, Washington, D.C.

- ¹ Further reports of this research project are available on request from the third author at the Psychology Department, U 20 University of Connecticut, Storrs, CT 06268



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Introduction

Juvenile delinquency is a societal problem of ominous proportions. Statistics recently reported before a Senate subcommittee indicate that at least 50% of all violent crimes are committed by persons 20 or younger. And as many as one of every three teenagers participates in acts labelled delinquent (Sarason, 1976). Unfortunately, traditional treatment programs in institutional settings with this population have disappointing results (Robison & Smith, 1971). Consequently, documentation of an effective treatment approach for this group has important professional and community consequences.

Closely modeled after Outward Bound, the Connecticut Wilderness School (WS) provides an intensive 19 day outdoor experience of backpacking, hiking, rock climbing, and white water canoeing to problem youth referred by a wide variety of Connecticut agencies. The program is designed as a means of breaking patterns of failure by developing healthier and more positive self images in participants. This paper presents an empirical investigation of this format including a follow up of participants on personality, behavioral and social indicators. Earlier research on wilderness challenge experiences indicated that graduates have higher self esteem and improved self images (Clifford & Clifford, 1967; Whetmore, 1972). While participation in wilderness courses has also been associated with lower recidivism among adjudicated teens (Kelly & Paer, 1969), and reduced systems dependency, decreased use of illicit drugs, and fewer legal difficulties (Cytrynbaum, 1975), no detailed study of this form of program including controls and multi source followup data exists.

Several constructs important in understanding delinquent behavior were selected for thorough evaluation. These include internal external locus of control, self-confidence, self-image, and coping strategies. We hypothesized:

- (1) Participants will be more internally oriented, and higher

in self confidence following the course.

- (2) More effective interpersonal coping strategies will be noted following the course.
- (3) These results will be expressed fewer legal and social difficulties at follow up.

Methods

Subjects. 135 teenagers (95 males, 40 females), aged 13 to 20, were referred to the WS by 45 agencies, including juvenile court, the state "reform school," youth service bureaus, schools, and child guidance facilities. The course was successfully completed by 103 students. Comparable teenagers contacted through the referring agencies serve as a comparison group at a 6 month follow up study.

Procedure. WS courses are staggered throughout the summer months allowing use of the "recurrent institutional cycle" design (Campbell & Stanley, 1966). Groups beginning their course later in the summer are used as "waiting list" controls for earlier groups (See Figure 1 for more detailed outline).

To provide a converging network of results, distinct types of data were collected from a variety of sources. Referring agencies completed a Behavior Problem Checklist (Quay & Peterson, 1975), and rated students on dimensions of problem seriousness, self-awareness, emotional problems, and legal involvement.

Demographic and personality pretest measures were collected, including the Nowicki Strickland I-E Scale (1973), a self confidence scale (Clifford & Clifford, 1967), and the Like Me- Not Like Me, which was designed to assess self image. A random sub-sample of 72 students was also given a structured interview, assessing coping strategies in problematic interpersonal situations. The students were presented with 6 situations modified from the Interpersonal Problem Solving Assessment Technique (Nowinski & Getter, 1977).

A multi source follow up of these students is currently underway. Measures include I-E, a self-concept scale, and ratings of delinquent behavior from multiple sources (i.e. self, parent, agency). Students are also asked to identify areas in which they feel the most improvement has occurred, such as changes in family relationships, school performance, and involvement with the legal system. This phase of the research focuses on questions of how changes in personality and behavior persist over time, and how well the student integrates the WS experience into home, school, and community settings.

Results

Univariate data analysis indicates that the WS course is effective in altering self concepts among participants. A one way repeated measures analysis of variance shows that, as predicted, students who completed the WS course are significantly more internally oriented than waiting list control ($F(1, 95) = 39.61, p < .001$) (See Table 1). In addition, 5 of 6 paired individual pre and posttest comparisons are significant. This finding serves as a strong replication, showing this result persists cross different groups of participants, with different instructors, and with variations in the specific content of the courses. (See Table 2).

This pattern is also found in repeated measures analysis of the other personality questionnaires, self-confidence, and self-image. As predicted, WS students are more self-confident than waiting list controls ($F(1, 97) = 12.95, p < .001$). They rate themselves as more confident ($F(1, 97) = 5.56, p < .05$), thinking more of their abilities ($F(1, 97) = 4.91, p < .05$), feeling terrific ($F(1, 97) = 17.18, p < .001$), being more useful ($F(1, 97) = 9.33, p < .01$), and not lacking in confidence ($F(1, 97) = 14.44, p < .001$) after the course. Three of the six paired pre and posttest comparisons are significant.

Ratings on a measure of self-image are also more positive after the course. ($F(1, 134) = 513.116, p < .001$). When the paired pre- and posttest scores are analyzed, all six are significant.

Univariate repeated measures analysis of the problem solving interview indicates that students generate more problem solutions which are scored as effective following the course ($F(1,48) = 4.291, p < .05$). In addition, a trend toward fewer responses containing verbal or physical aggression is noted following the course ($F(1,48) = 2.294, p = .094$).

Multivariate analysis of variance (Manova) of the three person lit measures provides results congruent with the univariate results reported above. The multivariate analysis takes into account the degree of association among the 3 scales, and provides information about the proportion of variance attributable to the dependent variables. This repeated measures Manova indicates that WS students are more internal, more self-confident, and have a more positive self-image after the course (I-E: $F(1,69) = 40.485, p < .001, \text{Eta}^2 = .370$; Self-confidence $F(1,69) = 10.794, p < .002, \text{Eta}^2 = .135$; Self-image: $F(1,69) = 82.287, p < .001, \text{Eta}^2 = .544$).

With approximately one half of the follow-up data collected, the following preliminary results have been obtained. Repeated measure analysis of I-E scores at pretest, posttest, and follow up indicates that WS students remain more internally oriented 6 months after the course ($F(1,37) = 23.213, p < .001$). Interestingly, I-E scores in this sample of 33 students did not change from posttest to follow-up (Mean I-E scores at pretest = 12.500, posttest = 16.316, follow up = 16.316). Comparison of I-E scores between WS youngsters at follow up and comparison teenagers yields a $t_{61} = 2.776$, significant at $p < .01$, with WS students scoring in a more internal direction than the controls. The control sample t-test with the I-E pretest scores of the WS students is not significant ($T_{57} = .6473$).

Similarly, a self report measure of deviant behavior in a variety of settings shows WS students reporting significantly lower overall frequency of deviant behavior than the comparison group ($T_{63} = 2.3249$, $p .01$).

With approximately 65% of the parent questionnaires returned to date 77.5% of the parents report their youngsters overall behavior is better or much better since attending the WS program.

The youngsters themselves report positive change in 93% of the report completed to date. Analysis of the areas identified as changing the most by the teenagers yields the following top five categories: (1) meeting challenges, (2) self confidence, (3) getting along with parents, (4) grades in school, and (5) controlling temper.

Input from agencies, WS parents and students will be analyzed for convergent validity regarding change in behavior. Multiple regression analyses will be conducted to identify predictors of student who are successful in the WS program. More specific analyses of deviant behavior, drug and alcohol abuse, and other social indicators will also be completed.

Discussion

In view of the wide spread problem of delinquent behavior among America's youth, it is encouraging to find that a novel therapeutic approach can provide youngsters with an increased sense of personal control in their lives, and also improve their sense of efficacy and self confidence. Any technique that seems to work with this population deserves careful attention. Moreover, the wilderness challenge format as many positive community and individual components. It is a relatively inexpensive and constructive approach. It avoids stigmatization, labeling, and incarceration while promoting a positive view of self and program involvement. It is especially compatible with the adolescents' special skills and life style, and integrates well

with other community concerns, such as ecology and conservation.

For technique has a good deal of theoretical interest as well and is compatible with Rotter's (1954) social learning theory. For example, course experiences operate to alter the expectations these teenagers have about their impact on important events in their lives. Consequences of behavior are immediate. If tents are not set up, and it rains, the students get wet. Crews experience delay of gratification as they must travel a certain distance to reach the designated food drop. Each of these experiences provides new information to the students showing that their behavior does indeed affect what happens to them.

Another line of reasoning which helps explain the therapeutic success of the WS program is found in Seligman's (1975) theory of learned helplessness. Much as he argues that helplessness can only disappear when the individual alters a belief that responding will make a difference in the outcome of the situation, the series of individual and group challenges of the WS course restores the student's sense of efficacy and accomplishment.

Still another psychological theory which provides an interpretive framework for the therapeutic aspects of the WS is found in Nelson's (1964) adaptation level theory. Nelson argues that all human judgments are made with respect to a personal frame of reference. The neutral point in this subjective scale is called the adaptation level (AL). A single extreme stimulus can dramatically change the AL. In the WS experience, the experience is novel, participants have little prior experience with the specific tasks at hand. This allows the crew members to effect a shift in the AL of their beliefs about their self confidence, their image of themselves, and their capacity to handle stressful situations. This shift in AL allows the graduate to experience home environments as less stressful than before the course. The student can apply the problem solving skills, feelings of accomplishment, and self-confidence to difficult settings in home, school, and community.

REPEATED MEASURES ANALYSES OF VARIANCE

WS students vs. waiting list controls

	N	F	P
I-E	95	39.612	.001
Self-confidence	88	12.952	.001
Self-image	135	518.116	.001

Table 2

PAIRED PRE - AND POSTTEST CREWS: REPEATED MEASURES ANOVA

	N	F	P
Crews 1,2 vs. 3,4			
I-E	30	.033	ns
Self-confidence	29	26.494	.001
Self-image	43	155.419	.001
Crews 3,4 vs. 5,6			
I-E	28	17.106	.001
Self-confidence	28	19.690	.001
Self-image	41	170.733	.001
Crews 5,6 vs. 7,8			
I-E	22	25.626	.001
Self confidence	23	7.462	.025
Self-image	4	142.900	.001
Crews 7,8 vs. 9,10			
I-E	24	18.162	.001
Self-confidence	24	3.601	ns
Self-image	40	160.714	.001
Crews 9,10 vs. 11, 12			
I-E	34	11.276	.01
Self-confidence	30	.607	ns
Self-image	41	132.269	.001
Crews 11, 12 vs. 13			
I-E	25	6.919	.025
Self confidence	21	.60	ns
Self-image	32	134.059	.001

FIGURE 1

Schedule of Crews

